**SOLVING POLYNOMIAL EQUATIONS USING THE FACTOR THEOREM**

For all the polynomial equations below (questions 1 – 3):

* Use the Factor Theorem to find one factor
* Divide the polynomial by the factor to get a quadratic
* Factorise the quadratic
* Rewrite the polynomial equation in factorised form
* Solve the factorised equation.

**Questions**

1) Solve

2) Solve

3) Solve

4) and is a factor of . Calculate the value of k.

**Solutions**

1) Solve



a) => is a factor. b)

c) d)

=> solutions are .

2) Solve

a) => is a factor. b)



c) d)

=> solutions are .

3) Solve

a) => is a factor. b)



c) 6 d)

=> solutions are .

4) and is a factor of . Calculate the value of k.

Since is a factor, then = 0: